ATTACHMENT J.4.5

ON-SITE DISPOSAL FACILITY WASTE ACCEPTANCE CRITERIA

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J.4.5.1 GENERAL

This attachment presents information regarding the waste acceptance criteria applicable to the On-Site Disposal Facility (OSDF). Radiological/chemical waste acceptance criteria developed by the individual operable units at the FEMP and other physical criteria are identified in this attachment. Attainment of the waste acceptance criteria will be performed and verified in accordance with the Waste Acceptance Criteria Attainment Plan for the On-site Disposal Facility.

J.4.5.2 OSDF CHEMICAL/RADIOLOGICAL WASTE ACCEPTANCE CRITERIA

The *Final Record of Decision for Remedial actions at Operable Unit 2* (OU2 ROD) has established a radiological waste acceptance criteria of 346 pCi/g of U-238 or 1,030 mg/kg total uranium for Operable Unit remediation materials destined for the OSDF. Similarly, the *Final Record of Decision for Remedial Actions at Operable Unit 5* (OU5 ROD) established additional radiological and chemical waste acceptance criteria for Operable Unit 5 remediation soils destined for the OSDF. Similarly, the *Operable Unit 3 Record of Decision for Remedial Action* (OU3 ROD) has established a radiological waste acceptance criteria of 105 grams technetium-99 for OU3 remediation debris materials. These waste acceptance criteria have been compiled and are presented in Table J.4.5-1. The remediation materials sent to the OSDF from OU3 may also include small material contributions from OUs 1 and 4; any structural debris material resulting from facility shutdown and dismantlement of the remediation facilities from these latter OUs destined for the OSDF must meet the OU3 waste acceptance criteria.

J.4.5.3 PHYSICAL CRITERIA

The physical criteria (dimensions given are considered nominal) that shall be applied to material destined for the OSDF are:

- Materials from various building components (i.e., steel, concrete, masonry, rubble, finish components, etc.) shall be segregated at the staging area by the subcontractor;
- The maximum length of irregularly shaped materials or other components of a building superstructure or finish components shall be 10 ft.;
- The maximum thickness of irregularly shaped metals or components of a building superstructure shall be 18 in.;
- The maximum thickness of concrete or other components of a building slab or substructure shall be 18 in. when the materials are part of a load of similar material.

Table J.4.5-1
ON-SITE DISPOSAL FACILITY
WASTE ACCEPTANCE CRITERIA

	Constituent of Concern	Soil[a]		Debris[b]
		OU2	OU5[c]	OU3
1	**Radionuclides:** Neptunium-237		3.12×10^{9} pCi/g	
2	Strontium-90		5.67×10^{10} pCi/g	
3	Technetium-99		29.1 pCi/g	105 g
4	Uranium-238 Total Uranium	346 pCi/g 1,030 mg/kg	1,030 mg/kg	
5	**Inorganic:** Boron		1.04×10^{3} mg/kg	
6	Mercury[d]		5.66×10^{4} mg/kg	
7	**Organic:** Bromodichloromethane		9.03×10^{-1} mg/kg	
8	Carbazole		7.27×10^{4} mg/kg	
9	Alpha-chlordane		2.89 mg/kg	
10	Bis(2-chloroisopropyl)ether		2.44×10^{-2} mg/kg	
11	Chloroethane		3.92×10^{5} mg/kg	
12	1,1-Dichloroethene[d]		11.4 mg/kg	
13	1,2-Dichloroethene[d]		11.4 mg/kg	
14	4-Nitroaniline		4.42×10^{-2} pCi/g	
15	Tetrachloroethene[d]		128 mg/kg	
16	Toxaphene[d]		1.06×10^{5} mg/kg	
17	Trichloroethene[d]		128 mg/kg	
18	Vinyl chloride[d]		1.51 mg/kg	

Notes:
[a] Maximum concentration. Source: OU2 ROD
[b] Maximum total mass. Source: OU5 ROD
[c] Constituents which have established maximums which serve as WAC; other compounds which will not exceed designated Great Miami Aquifer action levels within 1,000-year performance period, regardless of starting concentration in the OSDF, are not listed.
[d] RCRA-based constituent of concern. Source: OU3 ROD

- The maximum thickness of an individual concrete member or other component of a building or slab or substructure shall be 4 ft. When the item is handled individually and is a regular shape having no concrete protrusions greater than 18 in.;
- Concrete reinforcement bars shall be cut within nominal 12 in. of the concrete mass;
- The maximum thickness of uniform pallets of building cladding (e.g., transite panels) properly banded into rectangular shapes shall be 4 ft.;
- Regulated asbestos containing material (ACM) shall be double-bagged at the source and delivered unmixed with other materials;
- ACM brick and commingled debris shall be double-contained and segregated at the source;
- Piping having insulation of ACM shall be segregated at the source and delivered unmixed with other materials;
- General building rubble consisting of wood, drywall, HVAC systems, electrical systems, plumbing systems, and minor equipment shall be sufficiently reduced in size to be gradeable into a 18 in. (1.5 ft.) lift by equipment similar to a Caterpillar D8 bulldozer;
- Equipment shall be drained of all oils and liquids;
- Piping with a nominal diameter of 12 in. or greater will be split in half; and
- The maximum dimension of general building rubble consisting of concrete, masonry and other similar materials shall be 18 in.

Impacted materials brought to the OSDF should not be at such a high moisture content that impacted material placement and compaction activities are impeded. Generally, soil should have a moisture content that allows the material to be compacted to the required relative compaction using standard soil compaction equipment and procedures. Soil should also have a moisture content that does not result in excessive "bleeding" of liquids.

J.4.5.4 Prohibited Items

The following are specifically prohibited from disposal in the OSDF:

- Impacted material exceeding the Waste Acceptance Criteria in Table J.4.5-1;
- Impacted material that is "characteristically hazardous" (RCRA characteristic waste"). Excluded from this prohibition is impacted material that has been treated so that it is no longer "characteristically hazardous;"

- Material from any off-site source, including any other DOE site, except as provided in the OU5 ROD, which states, "Specifically excluded from this prohibition are laboratory wastes generated at off-site facilities resulting directly from the chemical, radiological, and engineering analysis of FEMP waste/contaminated media or wastes generated at off-site facilities during the conduct of treatability or demonstration type studies on FEMP material;"
- Pressurizable gas cylinders;
- Process-related metals (OU3 ROD Category C materials);
- Product, residues, and other special materials (a subset of OU3 ROD Category J materials);
- Materials containing free liquids;
- Intact drums (i.e., drums must be empty and crushed);
- Acid Brick (OU3 ROD Category F materials);
- Transformers, which have not been either crushed or had their void spaces filled with grout (or other material approved by the FDF Technical Representative);
- Whole or shredded scrap tires;
- Used oils; and
- Materials not accompanied by the appropriate transportation "manifest" information.